

REMARKS

Favorable reconsideration and allowance of the subject application are respectfully requested.
Claims 1-4 are pending in the present application, with claim 1 being independent.

Claim Rejections Under 35 USC §103

The Examiner rejected claims 1-4 under 35 USC §103(a) as being unpatentable over Nakamura (Japanese Patent Application No. 2000-237288) in view of Japanese Utility Model Application No. 06-024760. This rejection is respectfully traversed insofar as it pertains to the presently pending claims.

According to Nakamura, as described in the claims, nitrogen gas is used as a carrier gas. Organo also uses, as described in paragraph [0005], a gas cylinder filled with pressurized nitrogen gas or inert gas such as argon gas.

Thus, neither Nakamura nor Organo disclose a sterilizing and disinfecting apparatus of the present invention which uses carbon dioxide gas as a carrier gas, and even if a pressure reducing valve and a hand truck described in Organo are applied to a sterilizing and disinfecting apparatus of Nakamura, it is impossible to realize the construction of the present invention.

As described in the Specification, carbon dioxide gas which is filled in the gas cylinder under pressure is liquefied inside the gas cylinder, and has a property of keeping its liquefied state even at room temperature, as far as the inner pressure of the gas cylinder is maintained. Hence, adoption of carbon dioxide gas as a carrier gas makes it possible to use a gas cylinder filled with a large amount of gas, which is small in volume and easy to handle.

On the other hand, carbon dioxide gas has a special property that, when it is discharged from the gas cylinder in which the gas is in a liquefied state, the gas temporarily freezes into a dry ice due

to expansion under a reduced pressure for the discharge, and then vaporizes. This property causes a problem that the gas in a frozen state is impossible to be discharged from the gas cylinder.

To avoid such a problem, it is effective to heat the vicinity of a pressure reducing valve with a heater. However, a heater necessitates a power source, which causes difficulty in providing a portable type sterilizing and disinfecting apparatus as described in the present invention.

Nakamura and Organo use nitrogen gas or an inert gas as a carrier gas. This type of carrier gas filled in a gas cylinder under pressure maintains its vaporized state in the cylinder, it is inevitable to use a gas cylinder of a large size and enhanced strength, thus causing a problem of difficult handling.

Moreover, Organo discloses a construction in which a gas cylinder and a tank for disinfecting solution are connected with a third pipe, and the inner pressure of the gas cylinder is applied to the surface of the disinfecting solution so as to push the solution into a spray gun through a second pipe, and to inject the solution by a function of the carrier gas supplied through a first pipe. This construction causes a problem of difficulty in spraying the chemical in the form of ultra fine particles as disclosed in the present invention.

Further, according to Organo, the inner pressure of the disinfecting solution tank remains even after the carrier gas in the gas cylinder has run out, and by a function of the inner pressure, the disinfecting solution supplied through the second pipe leaks out of the spray gun. This makes it impossible to use the Organo invention for spraying a chemical including alcohol, which is flammable.

Therefore, in view of the above comments, it should now be evident that the alleged combination of the cited art fails to teach the features of independent claim 1, as amended.

Dependent claims 2-4 should be considered allowable at least for depending from an allowable base claim.

Accordingly, withdrawal of the rejection is respectfully requested.

Conclusion


In view of the above amendments and remarks, this application appears to be in condition for allowance and the Examiner is, therefore, requested to reexamine the application and pass the claims to issue.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Martin Geissler (Reg. 51,011) at telephone number (703) 205-8000, which is located in the Washington, DC area.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: March 17, 2006

Respectfully submitted,

By  #39,491
Michael K. Mutter
Registration No.: 29,680
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant